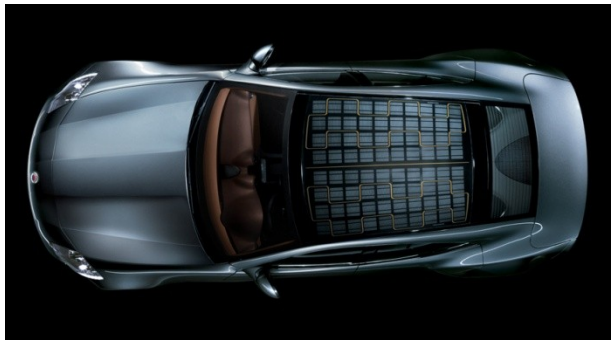
7 DE Admin Code 1140

Low Emission Vehicle Standard

Public Hearing

October 22, 2010



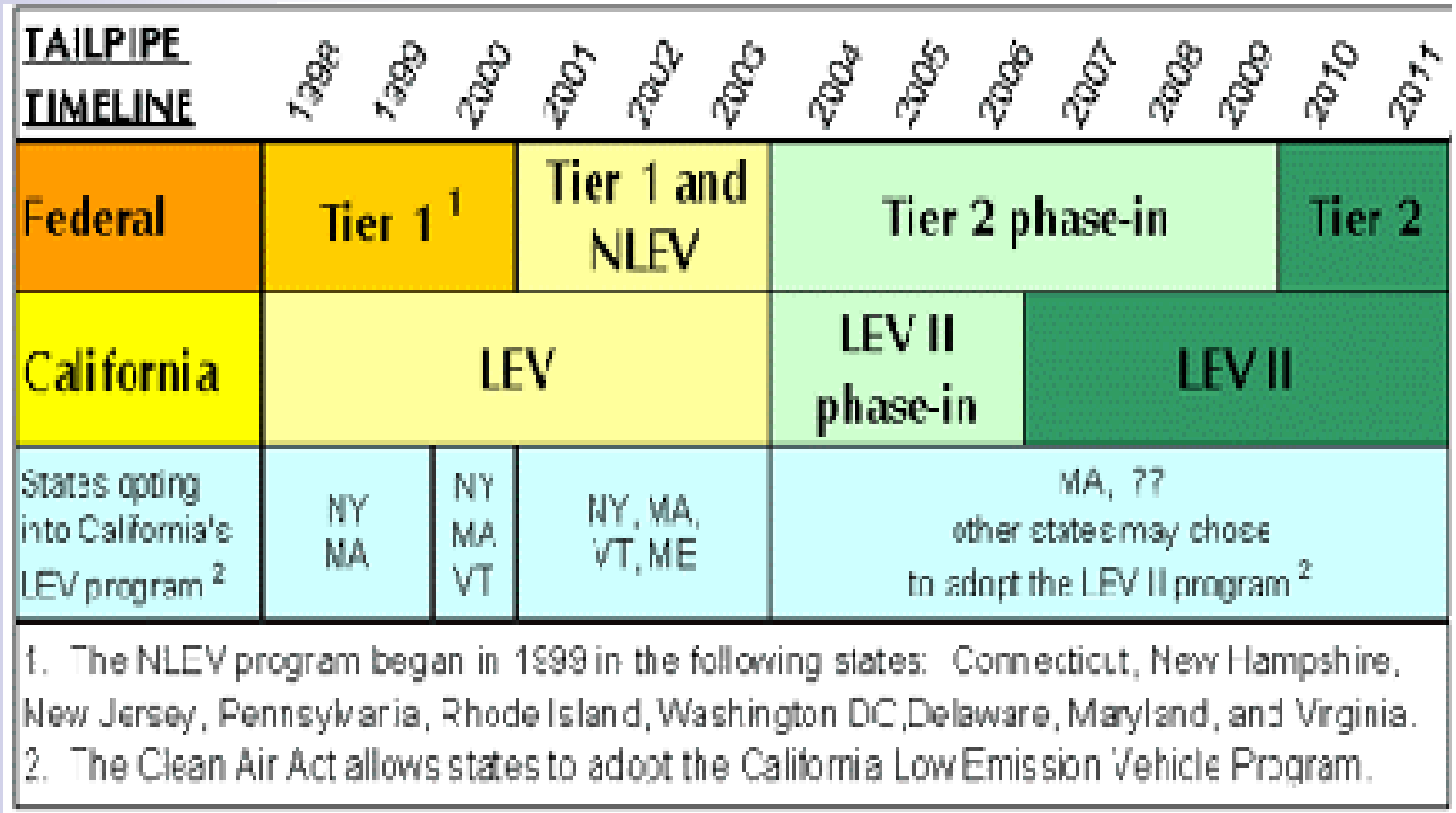
Blue Skies Delaware; Clean Air for Life

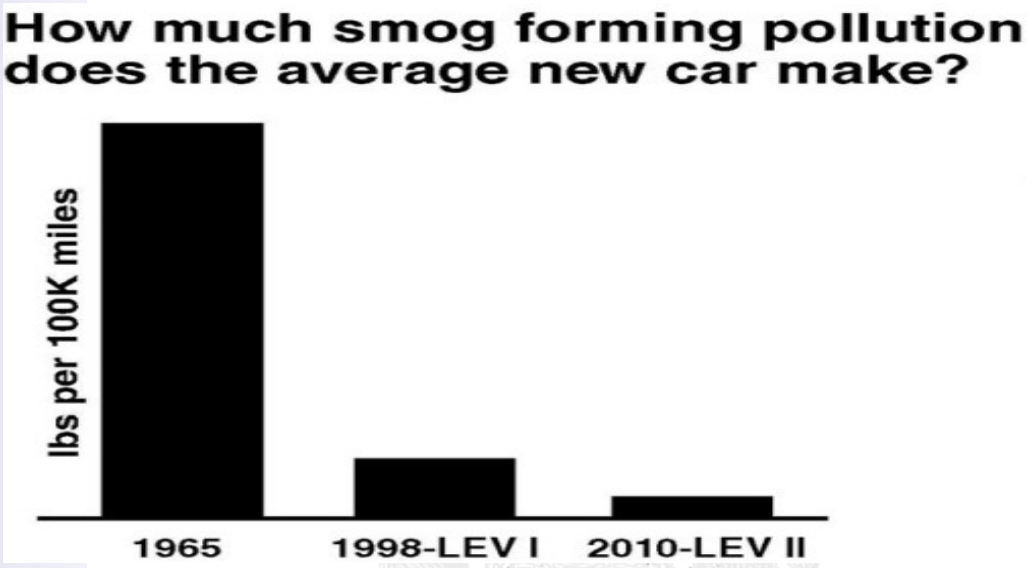
Regulation 1140 Overview

- The primary purpose of this regulation is to reduce vehicle emissions from new vehicles in Delaware beginning with model year (MY) 2013.
- Considerable benefits to human health and the environment will be realized under this program in the long term.
- This will be accomplished by adopting California's emissions standards, which are more stringent than the current federal standards.
- The LEV Program significantly reduces emissions of ozone precursors, particulates, toxic air pollutants, and greenhouse gases.

Quick Background Review

- Section 177 of the CAA, granted the authority for other states to adopt an identical California motor vehicle emission standards program, as well as prohibiting other states from setting their own standards.
- In the United States there are two Federally-sanctioned motor vehicle control programs: the Federal program (Tier 2) and the California program (LEV 2).


TAILPIPE TIMELINE
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Federal
Tier 1 [1]
Tier 1 and NLEV
Tier 2 phase-in
Tier 2
California
LEV
LEV II phase-in
LEV II
States opting into California's LEV program [2]
NY NA
NY MA VT
NY, MA, VT, ME
MA, ??
other states may chose to adopt the LEV II program [2]
1. The NLEV program began in 1999 in the following states: Connecticut, New Hampshire, New Jersey, Pennsylvania, Rhode Island, Washington DC, Delaware, Maryland, and Virginia.
2. The Clean Air Act allows states to adopt the California Low Emission Vehicle Program.



A new 1965 car produced about a ton of smog-forming hydrocarbons during 100,000 miles of driving. Cal LEV emission standards cut that to 50 pounds for the average 1998 car. Lev II further reduced emissions from the average new 2010 car to approximately 10 pounds.

- **The proposed Delaware program contains two components that will reduce overall vehicle emissions: individual vehicle emission standards and fleet-wide emission standards.**

  - The individual vehicle emission standards component requires each manufacturer to certify that its passenger cars and light-duty trucks meet tailpipe emissions, on-board diagnostic requirements, and evaporative emission standards. California's emission standards are at least as stringent as the Federal Tier 2 standards.

  - A manufacturer's entire fleet of the vehicles must meet a specific fleet-wide average for non-methane organic gas (NMOG) emissions level. NMOG is very similar to VOC, but considers VOCs in a manner which places more emphasis on those VOCs that are more reactive, and thereby produce more ozone per unit of emission. A LEV program would mandate that Delaware would only receive vehicles that meet or exceed the California emission standards.

Federal Tier 2 / CAL LEV II
Emission Standard Comparison (g/mi)

	Intermediate Life (5 years / 50,000 mi)					Full Useful Life (120,000 mi)				
Tier 2	NMOG	CO	NOx	PM	HCHO	NMOG	CO	NOx	PM	HCHO
Bin #										
8	0.1	3.4	0.14	-	0.015	0.125	4.2	0.2	0.02	0.018
7	0.075	3.4	0.11	-	0.015	0.09	4.2	0.15	0.02	0.018
6	0.075	3.4	0.08	-	0.015	0.09	4.2	0.1	0.01	0.018
5	0.075	3.4	0.05	-	0.015	0.09	4.2	0.07	0.01	0.018
4	-	-	-	-	-	0.07	2.1	0.04	0.01	0.011
3	-	-	-	-	-	0.055	2.1	0.03	0.01	0.011
2	-	-	-	-	-	0.01	2.1	0.02	0.01	0.004
1	-	-	-	-	-	0	0	0	0	0
Fleet Ave.								**0.07**		
LEV Vehicle Type										
LEV	0.075	3.4	0.05	-	0.015	0.09	4.2	0.07	0.01	0.018
ULEV	0.04	1.7	0.05	-	0.008	0.055	2.1	0.07	0.01	0.011
SULEV	-	-	-	-	-	0.01	1	0.02	0.01	0.004
ZEV	-	-	-	-	-	0	0	0	0	0
Fleet Ave	**0.035**									

Affected Sources

- The California standards apply to new vehicles (less than 7,500 miles) transferred (i.e. sold, delivered, purchased, leased, rented, acquired, received, registered) into Delaware beginning with the 2013 model year.

- The regulation affects new gasoline and diesel passenger cars, light-duty trucks, and medium-duty vehicles.

Reducing Potential Adverse Health Impacts from Vehicles

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Reducing Potential Adverse Health Impacts from Vehicles

Non-Methane Organic Gases (NMOG) – VOCs in the atmosphere can lead to the formation of ground level ozone. Besides being a predominant factor in the formation of ozone, many VOCs are toxic and some are suspected carcinogens.

Carbon Monoxide (CO) – Three-quarters of carbon monoxide emissions come from on-road motor vehicles. High levels of CO can cause vision problems. Repeated exposures may contribute to cardiovascular effects. At extremely high levels, CO is poisonous and can cause death.

Nitrogen Oxides (NOx) – NO_x contributes to the formation of ground level ozone (smog) by reacting with volatile organic compounds (VOCs) in the presence of heat and sunlight. Short term exposure can cause rapid, shallow breathing and related airway irritation, coughing, wheezing, shortness of breath, and exacerbation of asthma, particularly in sensitive individuals and asthmatic children. Short term exposure also suppresses the immune system, decreasing the effectiveness of bodily defenses against bacterial infections.

Particulate Matter ($PM_{2.5}$) – Short term exposure to high particulate levels has been shown to aggravate lung disease causing asthma attacks and acute bronchitis, increases susceptibility to respiratory infections, and cause heart attacks and arrhythmias in people with heart disease. Long term exposure to high particulate exposure has been shown to increase respiratory symptoms (coughing, breathing difficulty), cause decreased lung function, aggravate asthma, cause development of chronic bronchitis or chronic obstructive lung disease, cause irregular heartbeat, increase the rate of heart attacks, and increase the rate of premature death in people with heart or lung disease.

Ozone (O_3) – Research studies indicate that markers of cell damage increase with ozone exposure. Some studies suggest that there is a link between ozone exposure and premature death of adults and infants. Other studies indicate a link between ozone and premature birth and adverse birth outcome, cardiovascular defects, and adverse changes in lung structure development in children.

Proposed Regulation 1140 Additioanl Benefits

- Provides additional reductions
- Proposed rule is more stringent than current federal
- The more reductions of ozone-producing pollution we can get from vehicle technology, the less we have to rely on controls from industrial or commercial sources. There is no single program left that by itself will have substantial emission reductions.
- 20+ states and Washington D.C. already participating in LEV program.

Emission Estimate for 2015
Federal Tier 2 / CAL LEV II
MOVES Emission Modeling Comparison (tons)

County		HC	CO	NO2	NO	NOx
Kent	FED	1672	27053	682	2745	3427
	LEV	1626	26691	670	2658	3328
	Reduction	46	362	12	87	99
NC	FED	5710	89752	2190	9620	11810
	LEV	5560	88489	2148	9332	11481
	Reduction	150	1263	42	288	329
Sussex	FED	2293	36379	995	3980	4975
	LEV	2229	35928	977	3852	4829
	Reduction	64	451	18	128	146
Total	FED	9675	153184	3867	16345	20212
	LEV	9415	151108	3795	15842	19638
	Reduction	260	2076	72	503	574

Regulatory Requirements

For Public Noticing and

Participation Met

Regulation 1140 Public Notices

- Public Hearing notices in:
  - The Delaware State News and Sunday News Journal
  - Delaware Register of Regulations
  - State Calendar of Public Meetings
  - Publication in Air & Waste NEWS (e-news update)
  - DNREC NEWS press release
  - AQM's Regulation 1140 web page

  http://www.awm.delaware.gov/Info/Regs/Pages/1140.aspx